Three times the normal dose of phenol (3 grains) had no inhibiting effect either upon pancreatin or diastase.

Creosote. A normal dose of creosote (3 minims) had an inhibiting effect upon pepsin amounting to about 10 percent, while three times the normal dose of creosote (9 minims) increased the inhibiting effect on pepsin to about 67 percent.

Three times the normal dose of creosote (9 minims) seemed to have no inhibiting effect either upon pancreatin or diastase.

It must be remembered, of course, that all of these experiments were carried out as laboratory experiments in glass and it does not necessarily follow that paraform administered either to healthy or sick patients, would be without disturbing influences on digestion.

ANALYTICAL LABORATORY OF H. K. MUIFORD COMPANY, June 19, 1913.

EXAMINATION OF TIN FOILS FOR ARSENIC, AND A MODIFIED GUTZEIT'S TEST.*

A. F. JUDD, PHAR. D., PITTSBURGH.

I submit the following in answer to query No. 5, being data on a few tin foils which were obtained from several sources, i. e., Chocolate Candy, Gum, Tobacco, etc.

The work was carried out by first effecting solution by means of aqua regia, dispelling excess of acid, acidulating with dilute hydrochloric acid, and warming until a clear solution was obtained, except in the case of the so-called lead foils.

The arsenic was then determined qualitatively by means of a Marsh Arsenic Tube, and checked by a proposed modified Gutzeit's Method, both methods being continued one hour.

Below are given the foils in two groups, first, those which are practically pure tin foils; second, those which show a heavy lead reaction, and herein designated as lead foils.

Tin Foils—	
Fleishman's Yeast	Arsenic absent
Baker's Bitter Chocolate	Arsenic absent
Wittman's Candy "Sampler"	Arsenic absent
Wittman's Candy "Sampler," gilded	Arsenic absent
Cream Cheese, Shefford Cheese Co	Arsenic absent
Mulford's Phenolthalein Chocolates	Arsenic absent
Peter's Sweet Milk Chocolate	Arsenic trace
Peter's Sweet Milk Chocolate, 2 specimens	Arsenic absent
Hershey's Sweet Milk Chocolate	Arsenic trace
Bryn Mawr Chocolate, green foil	Arsenic absent
Bryn Mawr Chocolate, lavender foil	Arsenic absent
Wilbur's Chocolates	Arsenic absent
Fleishman's Yeast Spec., No. 2	Arsenic absent
Lead Foil—	
Johnson's Bitter Chocolates	Arsenic absent
Beechnut Chewing Gum	Arsenic absent
Piper Heidseck Chewing Tobacco	Arsenic absent
Beeman's Chewing Gum	Arsenic absent
Fatima Cigarettes	Arsenic present
Five Brothers Tobacco	Arsenic absent

* Presented to the Pennsylvania Pharmaceutical Association, July, 1913.

It would seem from the above data that the tin foils are generally of a nearly free arsenic nature.

The foils from Peter's Chocolate show a variation, in that one shows traces of arsenic, whereas it is absent in the other specimen. The specimens were obtained from different sources, and undoubtedly were from different stocks of foil.

Owing to the simplicity of the following method for the qualitative determination of arsenic and its apparent delicacy, it would seem strange to me that it had not been tried before, but I have been unable to find it mentioned in any available literature on the subject of arsenic.

In carrying out the Marsh Test to guard against the possible escape of undecomposed arsenic, the gas was lead into a weak silver nitrate solution and each specimen which contained arsenic caused a precipitation in the solution, therefore it occurred to me to try out the following method. It is simple, easily and readily carried out and seems very delicate.

It is based upon Gutzeit's well-known arsenic test. The apparatus consists of a generator, such as is used in the Marsh apparatus, and a 100 cc. Erlenmeyer flask containing 50 cc. of solution of silver nitrate, another containing 50 cc. of an alkaline solution of lead acetate.

The solutions are prepared as follows:

1. Lead Solution.

Lead acetate	0.5	
Sol. NaOH 5 percent	1000.	cc.

2. Solution of Silver Nitrate, centinormal.

The alkaline solution of lead acetate is intended to absorb any hydrogen sulphide which may be generating with the hydrogen; it is therefore placed between the generating flask and the one containing the silver solution, which will take up any arsene formed.

The following experiments may show the adaptability of this modified method.

Hydrogen produced from arsenic free zinc and sulphuric acid, run through the alkaline lead acetate, then through the silver nitrate, showed nothing in either flask, or at most only a slight darkening in the delivery tube of the last, or silver nitrate flask.

When 0.0072 arsenic, calculated as the element, was added, a very heavy and voluminous precipitation occurs in the silver nitrate flask.

With 0.00072 a heavy precipitate was still formed.

With 0.000072 there is still a very pronounced precipitation not only in the tube, but also throughout the solution of silver nitrate.

Lack of time prevented further work along this line, and also the investigation of the factors which might interfere, with one exception, the presence of hydrogen sulphide.

Ferrous sulphide was added to the apparatus generating the hydrogen, the solution containing the alkaline lead acetate was strongly darkened, while the silver nitrate was not affected.

Next ferrous sulphide and arsenic trioxide were added, with a darkening and precipitation in both flasks.

If this method is as reliable as it appears, it gives a qualitative method which is

both simple and easy, inasmuch as it does not require the same amount of attention that the Marsh test requires. It also lacks the danger of explosion and injury attendant on the Marsh test.

The extreme delicacy of this reaction might be considered an objection for the reduction of the silver nitrate with the gas delivered from nearly arsenic-free zinc and sulphuric acid; but this is never as pronounced as when the minutest amount of arsenic is present.

At most the reagents give a coloration at the end of the delivery tube, but never in the flask nor throughout the solution.

It seems best to run the reagents for ten or fifteen minutes before introducing the suspected substance, and noting the difference, if any, which may occur.

SUMMARY OF DRUG EXAMINATION RESULTS.*

J. ED. BREWER.

The following substances were examined during the past twelve months in the analytical department of Smith, Kline & French Co. Instances of adulterated and inferior drugs are given, as well as comparisons between drugs of medicinal and so-called garden variety:

Acacia. Three samples of acacia siftings were examined which yielded ash in excess of the U. S. P. limit of 4 percent.

Senna. Two samples of senna siftings yielded 16.22 percent and 25.25 percent of ash respectively.

The abnormal ash in this case, as well as in the acacia siftings, is quite probably due to the fact that when the drug is sifted the fine foreign material, such as sand, pebbles, etc., from the entire drug is left almost wholly in the siftings.

Some trouble was experienced in obtaining check results in determining the ash of senna siftings, due to the presence of pebbles of considerable size. This difficulty was overcome by reducing the entire sample to a No. 40 powder.

Aloin. Three samples of aloin were examined, none of which answered all of the U. S. P. requirements. Sample No. 1 contained 2.54 percent of water insoluble material, 21 percent of alcohol insoluble material, and left a residue of 1.2 percent upon ignition. Sample No. 2 contained 0.3 percent of water insoluble material, 22.9 percent of alcohol insoluble material, and left a residue of 0.56 percent upon ignition. Sample No. 3 was not soluble in 55 parts of acetone and left a residue of 0.4 percent upon ignition.

Considerable difficulty has been experienced in obtaining aloin of U. S. P. quality.

Cudbear. One sample of powdered cudbear was examined, which yielded 60.6 percent ash, 95.8 percent of which was sodium chloride.

Sarsaparilla Root. One sample of sarsaparilla root siftings yielded 44.49 percent of ash.

Spigelia. Two samples of spigelia were examined. One of the powdered

* Presented to the Pennsylvania Pharmaceutical Association, June, 1913.